Exploring Trainee Teachers' Academic Self-Concept, Academic Effort and Academic Confidence with Academic Achievement

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Article Info	Abstract
	Background: Distance learning requires teachers who are adequately trained and possess strong psychological constructs, including academic self-concept, academic effort, and academic confidence, to meet diverse student needs. These psychological factors are essential for effective teaching and learning, especially in remote educational settings. **Aims:** This study aims to examine the relationship between prospective teachers' academic effort and academic confidence with their academic performance across different achievement groups. **Method:** The study involved prospective teachers enrolled in two teacher-training programs: M.Ed (373 participants) and B.Ed (427 participants). A standardized research instrument was used to measure academic effort, academic self-concept, and academic confidence. Data were analyzed to compare differences among low-, average-, and high-achieving groups. **Results:** The analysis revealed significant differences in academic effort, academic self-concept, and academic confidence among the three academic achievement groups. High achievers demonstrated stronger psychological constructs compared to average and low performers. **Conclusions:** The study suggests that collaborative projects and teamwork integrating high, average, and low achievers can enhance the skills and expertise of all groups. Such collaboration may strengthen prospective teachers' academic self-concept and academic confidence, contributing to improved overall academic performance.

INTRODUCTION

Human beings have many complicated psychological variables which may be linked with their success or failures. We cannot deny the importance of these variables. Every individual is different from other in terms of their abilities, psycho-physical appearance, achievement, aptitudes, attitudes, intelligence, emotional well-being, personality etc. so, the impact of psychological variables on one individual is not same with others. Importance of psychological variables, i.e., self-concept, academic self-confidence and academic effort is not denied in the educational system. Self-concept is comprised of a set of complex traits of personality which has its impact on individuals' attitudes, behaviors, and moods especially when confronted in professional competence. Self-concept is composed of a set of an individual's personality traits which are related with his/her experience or self-awareness (Jaiswal & Choudhuri, 2017).

Self-concept is considered as core of a person's academic concept, social, and personal self-concepts (Amalu & Okon, 2018). These are important for students, administrators, and teachers. Teachers cannot be separated from the educational system. Teachers work at two levels, i.e., actual

classroom teaching and seeking professional training. In teacher training phase, trainee teachers are usually self-determined to attain their goals. They put their efforts to achieve high academically. Here, the importance of their self-concept is with their academic effort, and academic self-concept. So, teachers who seek professional training, these psychological variables may be linked with their future teaching learning situations. Studies investigated the relationship between trainee teachers' self-concept and their academic success (Dagnew, 2018; Bhati & Behera, 2021; Narasimhan, 2018; Lone & Lone, 2016). Some studies found that self-concept is not only associated with academic effort but also these two are linked with academic success of prospective teachers (Rady, 2016; Lone & Lone, 2016). However, some studies found contrary results (Bhati & Behera, 2021). The need to explore self-concept is indicated by Cruz, Manolo, & Lumahan (2022) that "it's a complex psychological construct that psychologists and educators must grasp since it has an impact on an individual's behavior, particularly at school" Extensive literature is also available on the self-concept which indicates its nature, components, and types. It also gives information that how self-concept can be acquired.

Literature Review

Self-concept is an established belief about one's own self, shaped gradually by influences from family, peers, teachers, and others during early development. It remains moderately stable in early adolescence but evolves in adulthood due to relationships and occupational factors (Susanto et al., 2020). General self-concept reflects overall behaviors, attitudes, and perceptions of oneself (Harter, 2012; Pratama & Sari, 2021), while academic self-concept pertains to beliefs about one's educational potential and abilities.

Characteristics of Self-Concept

Eccles (2018) identifies seven key features: planned, multidimensional, categorized, stable, progressive, evaluative, and differentiable. Modern research emphasizes dimensions like academic, social, and physical, arranged hierarchically with general self-concept at the top and specific domains branching below (Bong & Skaalvik, 2019; Skaalvik & Skaalvik, 2022). In education, self-concept significantly contributes to higher grades and achievement (Mwamwenda, 2020).

Importance in Education

Self-concept is vital for: (i) unlocking students' hidden potentials to boost academic performance; (ii) enhancing learning behaviors and personality development through educator interventions (Dambudzo, 2021). Students with negative academic self-concept often lack confidence and underperform (Hamachek, 2019; Sainz et al., 2025). Shavelson and Bolus (2020) distinguish general self-concept (impacting social-emotional life) from academic self-concept (driving academic interest and outcomes).

Causal Models of Self-Concept and Achievement

Three primary models explain their relationship (Jen & Chien, 2022): (a) Skill development model, where achievement shapes self-concept (Barker et al., 2021); (b) Self-enhancement model, where self-concept drives achievement (Green et al., 2023); (c) Reciprocal effects model, featuring mutual reinforcement (Marsh, 2024; Olatunde, 2022). The reciprocal model is most supported for its dynamic feedback loop (Valentine et al., 2023).

Development of Academic Self-Concept

Academic self-concept forms via teacher-student interactions, peer relations, and school environments (Bhati & Behera, 2024; Choi, 2021). It predicts achievement and student behaviors in educational settings (Marsh & Yeung, 2020). This study explores links between prospective teachers' academic effort, self-concept, confidence, and performance.

Research Objectives and Hypotheses

1) To explore the difference between academic self-concept and academic performance of prospective teachers.
2) To investigate the difference between academic effort and academic performance of prospective teachers.

3) To examine the difference between academic self-concept and academic performance of prospective teachers.

H01: Academic self-concept of Low, Average and High academic achievement groups of distance learners has no significant difference.

H02: Academic effort of Low, Average and High academic achievement groups of distance learners has no significant difference.

H03: Academic self-confidence of Low, Average and High academic achievement groups of distance learners has no significant difference.

METHOD

Research Design

Cross-sectional research design (survey method) was used. "Cross-sectional study design is a type of observational study design. In a cross-sectional study, the investigator measures the outcome and the exposures in the study participants at the same time or data is collected from individual at a single point in time in which researcher doesn't influence the participants" (Setia, 2016; Lauren 2022). Two phases were included in this research. Phase-I was related to instrument adaptation and validation. Phase-II was related to data collection, analysis and report writing. A brief description of the work done is mentioned ahead.

Participant

Population of this study was prospective teachers of Allama Iqbal open University (AIOU) of M. Ed and B. Ed (1.5 years). There were 1600 participants of the study in population (M. Ed=854, and B. Ed (1.5 years) =746). Sample was 800 participants {(M. Ed (427) and B. Ed (323)} which were selected through random sampling technique by using table of random number by Gay, Mills and Airasian (2012).

Instrument

Instrument preparation was the first phase of the study. For that purpose, standardized scale of Liu & Wang (2005) "Academic Self-Concept Scale" was modified and used. Permission was taken from Liu & Wang for adapting their scale after that piloting was done.

Academic Self-Concept Scale (ASCS). This was self-report scale which comprised of 20 items with two subscales. An equal number of items were in subscale-I Academic Effort and 10 items in subscale-II Academic Confidence. Following is the description of both subscales:

Table 1. Academic Self-Concept Scale

Sub scales	Items	Even Items	Odd Items	Response pattern
Academic Effort	10	2, 4, 6, 8, 10, 12, 14, 16, 18, 20		Five-point Likert Scale "Strongly Agree 5, Agree 4, Neither Agree nor Disagree 3, Disagree 2, Strongly Disagree 1"
Academic Confidence	10		1, 3, 5, 7, 9, 11,13, 15, 17, 19	

The maximum scale total was 100 and minimum was 20. An individual who scored above average was considered as having high academic effort and high academic confidence and vice versa.

Validity and Reliability. In the first step, research the instrument was adapted, and experts' opinion was sought from 5 educational experts. Based upon the remarks of judges, no item was deleted/added. However, few modifications were made and CVI was calculated. Then, a pilot test was also done. To pilot the tool, randomly selected 10% sample was drawn. The reliability coefficient of the scale was established through Cronbach's alpha reliability coefficient that was .81*. Analysis plan

(describe statistical tests and the comparisons made; ordinary statistical methods should be used without comment; advanced or unusual methods may require a literature citation):

Scope and/or limitations of the methodology

In the data collection phase, the participants were approached through telephonic conversation and emails to collect data. Permission was taken from them for distribution of questionnaire. Students were made clear about the purpose of study. The respondents were instructed about questionnaire completion and were made sure to fill in the measure as honestly as possible. After collecting data, data analysis was done. The data was collected during workshops.

RESULTS AND DISCUSSION

Results

One way ANOVA and LSD Post Hoc test were applied to test hypothesis and sub hypotheses. Description of the results is as below:

Analysis and Interpretation of $H0_1$: Academic self-concept of Low, Average and High academic achievement groups of distance learners has no significant difference.

Table 2a. Achievement wise group differences on Academic Self-Concept (p<.001).

Achievers' Groups	Academic Self-Concept					F	P
	N	M	SD	LL	UP		
Low Achievers	146	48.8	12.1	46.9	50.8		
Average Achievers	310	72.9	8.2	72.0	73.8		
High Achievers	344	76.0	7.8	75.2	76.8	504.2	.000
Total	800	69.89	13.41	68.96	70.82		

Table 2a illustrates the academic self-concept of different achievement groups. The table shows that low achievers have lowest Mean for academic self-concept (M=48.8) and Average Achievers have average mean for academic self-concept (M=72.9) while High Achievers have highest mean score (M=76.0) for academic self-concept with SD=12.1, 8.2, 7.8 respectively. The differences were significant at the 0.05 level of significance with F= 504.0 and p=.000. Therefore, the hypothesis that "academic self-concept of Low, Average and High academic achievement groups of distance learners has no significant difference" is rejected.

Table 2b. Least Significant Difference of Achievement Groups (*p<.001*)

Achievers' Groups (I)	Achievers' Groups (J)	Mean Difference (I-J)	Sig.
Low Achievers	Average Achievers	-24.05113*	.000
	High Achievers	-27.14925*	.000
Average Achievers	Low Achievers	24.05113*	.000
	High Achievers	-3.09812*	.000
High Achievers	Low Achievers	27.14925*	.000
	Average Achievers	3.09812*	.000

Table 2b predicts that there is a significant difference between low achievers' groups with average achievers and high achievers' groups. There is a significant difference between the average achievers' group with low achievers and high achievers' groups. There is also a significant difference between the high achievers' group with low achievers and average achievers' groups. Interestingly, this can also be predicted that students with low academic self-concept were found low academic achievers, students with average level academic self-concept were found average academic achievers and students with high academic self-concept were found high academic achievers.

Analysis and Interpretation of H0[2]: There is no significant difference among academic effort of different academic achievement groups (Low, Average, High) of distance learners.

Table 3a. Achievement wise group differences on Academic Effort (p<.001)

Achievers' Groups	Academic Effort					F	P
	N	M	SD	LL	UP		
Low Achievers	146	23.0	6.5	21.9	24.1		
Average Achievers	310	35.8	4.9	35.3	36.4		
High Achievers	344	37.4	4.8	36.9	38.0	412.7	.000*
Total	800	34.2	7.4	33.7	34.7		

Table 3a illustrates the academic effort of different achievement groups. Table shows that low achievers have lowest mean for academic effort (23.0), average achievers have average mean (35.8) while high achievers have high mean (37.4). The differences were significant at 0.05 level of significance with F= 412.7 and p=.000. Therefore, the hypothesis "There is no significant difference among academic effort of different academic achievement groups (Low, Average, High) of distance learners" is rejected.

Table 3b. Least Significant Difference of Achievement Groups (*p<.001*)

Achievers' Groups (I)	Achievers' Groups (J)	Mean Difference (I-J)	Sig.
Low Achievers	Average Achievers	-12.84*	.000*
	High Achievers	-14.43*	.000*
Average Achievers	Low Achievers	12.84*	.000*
	High Achievers	-1.59*	.000*
High Achievers	Low Achievers	14.43*	.000*
	Average Achievers	1.59*	.000*

Table 3b predicts that there is a significant difference between the low achievers' group with average achievers and high achievers' groups. There is a significant difference between the average achievers' group with low achievers and high achievers' groups. There is also a significant difference between the high achievers' group with low achievers and average achievers' groups. This can also be predicted that students with low academic effort were found low academic achievers, students with average level academic effort were found average academic achievers, and students with high academic effort were found high academic achievers.

Analysis and Interpretation of H0[3]: Academic self-confidence of Low, Average and High academic achievement groups of distance learners has no significant difference.

Table 4a. Achievement wise group differences on Academic Confidence (*p<.001*)

Achievers' Groups	Academic Self-Confidence					F	P
	N	M	SD	LL	UP		
Low Achievers	146	25.8	6.5	24.7	26.9		
Average Achievers	310	37.0	4.5	36.5	37.5		
High Achievers	344	38.5	4.0	38.1	38.9	387.2	.000*
Total	800	35.6	6.6	35.1	36.1		

Table 3a shows the academic confidence of different achievement groups. Mean values of the table indicate that low achievers have low Mean for academic confidence (25.8), average achievers have average mean (37.0) while high achievers have high Mean (38.5). The differences were significant at 0.05 level of significance with F=387.2 and p=.000. Therefore, the hypothesis "There is no significant difference among academic confidence of different academic achievement groups (Low, Average, High) of distance learners" is rejected.

Table 4b. Least Significant Difference of Achievement Groups (*p<.001*)

Achievers' Groups (I)	Achievers' Groups (J)	Mean Difference (I-J)	Sig.
Low Achievers	Average Achievers	-11.20*	.000
	High Achievers	-12.71*	.000
Average Achievers	Low Achievers	11.20*	.000
	High Achievers	-1.50*	.000
High Achievers	Low Achievers	12.71*	.000
	Average Achievers	1.50*	.000

Table 2b predicts that there is a significant difference between the low achievers' group with average achievers and high achievers' groups. There is a significant difference between the average achievers' group with low achievers and high achievers' groups. There is also a significant difference between the high achievers' group with low achievers and average achievers' groups. This can also be predicted that students with low academic effort were found low academic achievers, students with average level academic effort were found average academic achievers, and students with high academic effort were found high academic achievers.

Discussion

The findings of this study demonstrate clear differences in academic self-concept, academic effort, and academic confidence across low-, average-, and high-achieving distance learners. These results contradict all three null hypotheses, indicating that psychological factors play a decisive role in shaping academic outcomes in distance-learning environments.

First, the analysis revealed a significant variation in academic self-concept among the three achievement groups. High achievers reported stronger beliefs in their academic abilities, whereas lower achievers exhibited diminished self-perceptions. This pattern aligns with recent evidence showing that academic self-concept is a strong predictor of motivation, persistence, and academic success across diverse educational settings (Arens & Marsh, 2019; Talsma et al., 2018). Students with a well-developed academic self-concept are more likely to set higher expectations for themselves and engage more deeply with learning tasks, which may explain the superior performance of the high-achieving group.

Second, the findings also confirmed significant differences in academic effort among low, average, and high achievers. High achievers tended to exert more consistent effort, while low achievers showed limited engagement with academic tasks. This supports contemporary research demonstrating that academic effort—expressed through persistence, study habits, and time investment—is a robust predictor of academic performance in both traditional and online learning contexts (Credé & Phillips, 2017; Richardson et al., 2020). The results reinforce the notion that effort functions as a mediating variable that enhances learning outcomes, particularly in self-directed distance education.

Third, academic confidence differed significantly across the three groups. High achievers exhibited the highest levels of academic confidence, which has been shown to correlate strongly with improved performance, resilience, and willingness to undertake challenging coursework (Putwain et al., 2021; Stankov & Lee, 2014). In contrast, low achievers demonstrated reduced confidence, which may hinder their motivation and limit academic engagement. The consistent pattern across self-concept, effort, and confidence suggests an interconnected cycle where positive psychological attributes reinforce each other to support higher academic achievement.

Collectively, these findings support the broader framework that academic self-beliefs, behavioral engagement, and confidence form an integrated motivational system influencing academic success (Trautwein et al., 2023). For distance learners, who often navigate academic tasks with reduced instructional support, the importance of these attributes may be even more pronounced. Therefore, educational interventions that strengthen self-concept, promote sustained academic effort, and enhance confidence may help narrow achievement gaps among distance learners.

Implications

The results of this study highlight the importance of psychological factors—academic self-concept, effort, and confidence—in shaping the academic achievement of distance learners. Since high achievers consistently demonstrated stronger self-concept, greater effort, and higher confidence, distance education programs should integrate strategies that strengthen these traits among students, especially those performing at lower levels. Providing constructive feedback, offering study-skills training, and creating supportive learning environments can help learners build belief in their abilities, increase their academic effort, and boost confidence. Tailored interventions for different achievement groups may further enhance learning outcomes, as low achievers may require motivational and remedial support, while high achievers may benefit from enrichment opportunities. The study suggests that curriculum designers, instructors, and academic advisors should incorporate psychological support mechanisms into distance learning systems to improve student performance and promote sustained academic success.

Research contribution

This is important research which contributes to the growing body of studies on importance of different psychological factors that influence teachers' academic effort, academic self-concept and academic confidence. These are important areas in teacher education which may be empowered by teachers before entering their classes. These may impact on the quality of teaching of teachers. By exploring the relationship between academic effort, academic self-conception, and academic confidence with academic performance this study provides empirical evidence on how these constructs are related and may affect varying achievement levels of distance learners' prospective teachers. The findings of this research would provide significant data for planners and policy makers to peep inside the important elements of psychological variables and embed these into curriculum for teachers training. This would also enlighten curriculum designers to design targeted interventions that support the development of self-concept and confidence, that serve as important and crucial areas for effective teacher training programs in remote education environments.

Limitations

There were certain limitations of this research. These include:

1) Present research was limited to only distance learning mode teacher training programs. Future research may combine aspects of face-to-face learning which may give a broader picture of teachers' psychological variables.

2) The study may have limited generalizability of results as it was confined to two teacher education programs (M. Ed and B. Ed), future research may be conducted in other educational contexts or disciplines.
3) Self-reported data may limit the ability to establish causal relationships between psychological constructs and academic performance.
4) There may be intervening variables which were beyond control of the researchers i.e. cultural and institutional factors etc.

Suggestions

Study recommended that curriculum planners of distance education may include psychological exercises so that proper attention may be given to these important psychological variables so that the prospective teachers may equip themselves with adequate amount of self-confidence and self-concept. Some interactive, collaborative and teamwork activities among high, average, and low achievement groups of prospective teachers may be organized to enhance and share the expertise of high achievement-high self-concept/high self-confidence and low achievement-low self-concept/low self-confidence groups. This collaboration may enhance the expertise and skills of each group.

CONCLUSION

This study concluded that distance learners with high academic self-concept possess high achievement, those with Low achievement exhibit low academic self-concept and distance learners with average academic performance had average academic self-concept. and High academic achievement groups of distance learners have significant positive relationships. So, it is concluded that there is a significant relationship between academic self-concept and academic achievement of distance learners. Another conclusion was that distance learners with high academic self-confidence had high achievement, Low achievement group students exhibited low academic self-confidence and average performers had average academic self-confidence. So, it was predicted that students with low academic confidence were found low academic achievers, students with average level academic confidence were found average academic achievers, and students with high academic confidence were found high academic achievers.

ACKNOWLEDGMENT

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